General

Guideline Title

Oral health assessment: best practice guidance for providing an oral health assessment programme for school aged children in Ireland.

Bibliographic Source(s)

Irish Oral Health Services Guideline Initiative. Oral health assessment: best practice guidance for providing an oral health assessment programme for school-aged children in Ireland. Cork (Ireland): Oral Health Services Research Centre; 2012. 52 p. [111 references]

Guideline Status

This is the current release of the guideline.

Recommendations

Major Recommendations

The grades of recommendations (A to D, GPP) are defined at the end of the "Major Recommendations" field.

To optimise effectiveness, an oral health assessment programme for school-aged children should operate against a background of:

a. Population-level oral health promotion strategies
b. Integrated primary health care services for children, to allow early identification and referral of high caries risk preschool children into dental services (see the Irish Oral Health Services Guideline Initiative guideline "Strategies to prevent dental caries in children and adolescents: evidence-based guidance on identifying high caries risk children and developing preventive strategies for high caries risk children in Ireland.") [D]

Oral health assessments for school-aged children should be conducted in a dental clinic. [GPP]

All children should be offered an oral health assessment, including a formal caries risk assessment, during their first year in primary school (see the Irish Oral Health Services Guideline Initiative guideline "Strategies to prevent dental caries in children and adolescents: evidence-based guidance on identifying high caries risk children and developing preventive strategies for high caries risk children in Ireland.") [D]

Formal caries risk assessment is an important component in developing an appropriate oral health care plan for each child, and the baseline risk assessment at school entry allows changes in risk status to be monitored over time. A Caries Risk Assessment Checklist has been developed specifically to assist clinicians in assessing the individual caries risk of children in Ireland. The Caries Risk Assessment Checklist and accompanying notes can be found in Appendix 4 in the original guideline document.

To promote, protect and improve children's oral health from school entry onwards, the interval between oral health assessments for school-aged children should not exceed 12 months (National Collaborating Centre for Acute Care, 2004). [GPP]

The recall interval for individual children should be informed by the Caries Risk Assessment, and children who are considered high caries risk may need a shorter recall interval.

A school-linked* approach to offering oral health assessments should be maintained and strengthened. [GPP]

A school-linked approach ensures that children are not lost from the system even if they change school or address. It also raises the profile of oral health within the school, which may encourage uptake of oral health assessments. All parents should be made aware of the importance of oral health assessments so that children who are home-schooled have the opportunity to register with the dental service.

Oral health assessments should be conducted in accordance with best practice, as outlined in Section 3 of the original guideline document and summarized below. [GPP]

Caries preventive strategies should be provided to children in accordance with the recommendations of the guidelines on Topical Fluorides, Strategies to Prevent Dental Caries and Pit and Fissure Sealants (see the Irish Oral Health Services Guideline Initiative guidelines "Strategies to prevent dental caries in children and adolescents: evidence-based guidance on identifying high caries risk children and developing preventive strategies for high caries risk children in Ireland," and "Pit and fissure sealants: evidence-based guidance on the use of sealants for the prevention and management of pit and fissure caries"). [D]

Standardised data on the uptake, outputs and clinical outcomes of the oral health assessment programme should be collected locally and compiled nationally. [GPP]

*School-linked means that there is a connection between the school and dental services for administration of the oral health assessment programme (e.g., use of class lists or distribution of consent forms) or for facilitating oral health promotion initiatives. Oral health assessments are conducted in the dental clinic.

Oral Health Assessment Programme for School-Aged Children: Summary

A programme of annual oral health assessments for children from school entry (age 5) up to the age of 16 is proposed as the best practice approach for promoting, protecting and maintaining the oral health of school-aged children in Ireland. The key elements of the proposed programme are summarised below.

<table>
<tr><th>Class</th><th>Junior Infants</th><th>Senior Infants</th><th>1st Class</th><th>2nd Class</th><th>3rd Class</th><th>4th Class</th><th>5th Class</th><th>6th Class</th><th>1st Year</th><th>2nd/3rd Year</th></tr>
<tr><td>Age</td><td>Age 5</td><td>Age 6</td><td>Age 7</td><td>Age 8</td><td>Age 9</td><td>Age 10</td><td>Age 11</td><td>Age 12</td><td>Age 13</td><td>Age 14-15</td></tr>
<tr><td rowspan="3">Key Developmental Milestones</td><td colspan="3">Emergence of:
First permanent molars
Central incisors</td><td colspan="2" rowspan="3"></td><td colspan="3" rowspan="2"></td><td colspan="2" rowspan="2"></td></tr>
<tr><td colspan="3" rowspan="2"></td></tr>
<tr><td colspan="3">• Emergence of maxillary canines</td></tr>
<tr><td colspan="3" rowspan="2"></td><td colspan="5">• Emergence of second permanent molar</td></tr>
<tr><td>Oral Health Assessment (from school entry)</td><td colspan="3">Medical, Dental and Social history
Clinical examination*
Caries Risk Assessment^</td><td colspan="2">As for Age 5-7, plus
Assess fissure sealant status
Palpate for maxillary canines</td><td colspan="3">As for Age 5–9, plus
Palpate for maxillary canines; consider radiographs if concerned about canine displacement
Assess orthodontic treatment need
Assess for approximal caries
Assess periodontal health
Assess for tooth wear</td><td colspan="2">As for Age 5-12</td></tr>
<tr><td></td><td colspan="3"></td><td colspan="2"></td><td colspan="3"></td><td colspan="2"></td></tr>
</table>

Caries Prevention	Junior Infants	Senior Infants	1st Class	2nd Class	3rd Class	4th Class	5th Class	6th Class	1st Year	2nd/3rd Year
Age	**Age 5**	**Age 6**	**Age 7**	**Age 8**	**Age 9**	**Age 10**	**Age 11**	**Age 12**	**Age 13**	**Age 14-15**
	Encourage • Healthy eating in line with national dietary guidelines • Limiting consumption of sugar-containing foods and drinks and, when possible, confining their consumption to mealtimes • Use of fluoride toothpaste containing at least 1,000 ppm fluoride (F), twice a day – at bedtime and at one other time during the day <u>High caries risk‡</u>: *As above, plus* • Apply fluoride varnish 6/12 or 3/12 • Apply and maintain fissure sealant to first permanent molars • Apply fluoride varnish or consider glass ionomer as an interim sealant if moisture control is inadequate			*As for Age 5–7, plus* • Repair or replace defective or missing sealants		*As for Age 5–9, plus* <u>High caries risk</u>: • Apply and maintain fissure sealant to second permanent molars			*As for Age 5-12*	
Recall	Within 12 months			Within 12 months		Within 12 months			Within 12 months	
Clinical Audit	Number and percentage of children in each class: • Receiving an oral health assessment • Being assessed as high caries risk • Receiving recommended preventive care • Being recalled within a 12 month period			*As for Age 5–7, plus* Number and percentage of 8-year-old children: • With caries experience (i.e., untreated caries, filling or extraction due to caries) in one or more first permanent molars • With fissure sealant on 1st permanent molars • With trauma to permanent incisors		*As for Age 5–7, plus* Number and percentage of children in each class: • Receiving an orthodontic assessment • Meeting Health Service Executive (HSE) orthodontic referral criteria • Having bitewing radiographs taken • Having one or more permanent teeth extracted due to caries • Having untreated caries or restorations for caries in permanent teeth • With fissure sealant on permanent molars • With trauma to permanent incisors			*As for Age 5–7, plus* Number and percentage of children in each class: • Having bitewing radiographs taken • With caries experience (i.e., untreated caries, filling or extraction due to caries) in permanent teeth • With trauma to permanent incisors	
Goal	<u>Age 5</u>: • Reduction in the number and percentage of children with caries experience in primary			<u>Age 8</u>: Reduction in the number and percentage of children: • With caries experience in first		<u>Age 12</u>: • Increase in detection of ectopic canines • Reduction in the number and percentage			<u>Age 15</u>: *As for age 12*	

Class	Junior Infants	Senior Infants	1st Class	2nd Class	3rd Class	4th Class	5th Class	6th Class	1st Year	2nd/3rd Year
Age	Age 5	Age 6	Age 7	Age 8	Age 9	Age 10	Age 11	Age 12	Age 13	Age 14-15
	Age 5–7: • Reduction in number of children requiring dental general anaesthesia					• Reduction in overall caries experience (mean decayed/missing/filled teeth [DMFT]/S) • Reduction in untreated trauma				

* Extra oral and intra oral examination, including assessment of oral hygiene, caries, tooth wear, trauma and oral development. See Section 3 in the original guideline document for more details.

^ See Appendix 4 in the original guideline document.

¥ See Appendix 7 in the original guideline document for a summary of European recommendations on selection criteria for taking bitewing radiographs and intervals between bitewing examinations.

‡ High caries risk refers to children who are at risk of developing high levels of dental caries, or who are at risk from the consequences of caries, including those who are at risk by virtue of their medical, psychological or social status, i.e. at risk of or from caries.

Definitions:

Levels of Evidence

1++ High quality meta-analyses, systematic reviews of randomised controlled trials (RCTs), or RCTs with a very low risk of bias

1+ Well-conducted meta-analyses, systematic reviews or RCTs with a low risk of bias

1- Meta-analyses, systematic reviews or RCTs with a high risk of bias

2++ High quality systematic reviews of case-control or cohort studies; high quality case-control or cohort studies with a very low risk of confounding or bias and a high probability that the relationship is causal

2+ Well-conducted case control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal

2- Case control or cohort studies with a high risk of confounding or bias and a significant risk that the relationship is not causal

3 Non-analytic studies, e.g., case reports, case series

4 Expert opinion

Grades of Recommendations

A At least one meta-analysis, systematic review, or randomised controlled trial (RCT) rated as 1++, and directly applicable to the target population

OR

A body of evidence consisting principally of studies rated as 1+, directly applicable to the target population, and demonstrating overall consistency of results

B A body of evidence including studies rated as 2++, directly applicable to the target population, and demonstrating overall consistency of results

OR

Extrapolated evidence from studies rated as 1++ or 1+

C A body of evidence including studies rated as 2+, directly applicable to the target population, and demonstrating overall consistency of results

OR

Extrapolated evidence from studies rated as 2++

D Evidence level 3 or 4

OR

Extrapolated evidence from studies rated as 2+

GPP (Good Practice Point) Recommended best practice based on the clinical experience of the Guideline Development

Source: SIGN guideline development handbook, SIGN 50 (http://www.sign.ac.uk/methodology/index.html).

Clinical Algorithm(s)

An algorithm for the organisation of current Public Dental Services for children, showing the core role of the School Dental Programme is provided in the original guideline document.

Scope

Disease/Condition(s)

Dental caries and other dental or oral diseases/conditions

Guideline Category

Prevention

Risk Assessment

Clinical Specialty

Dentistry

Pediatrics

Preventive Medicine

Intended Users

Advanced Practice Nurses

Allied Health Personnel

Dentists

Dietitians

Nurses

Other

Patients

Physician Assistants

Physicians

Public Health Departments

Students

Guideline Objective(s)

- To provide an evidence-based approach to the delivery of state-funded oral health assessments for school-aged children
- To reduce variation in practice by standardising the approach to the delivery of state-funded oral health assessments for school-aged children

Target Population

School-aged children in Ireland

Note: While the focus of this guideline is on school-aged children, the recommendations build on those of earlier guidelines in this series, which outline the measures that need to be taken at whole population, targeted population and individual level to prevent and control dental caries from infancy to adolescence.

Interventions and Practices Considered

1. Formal caries risk assessment during first year in primary school
2. Interval between oral health assessments not exceeding 12 months
3. School-linked approach to offering oral health assessments
4. Provision of caries preventive strategies (encouraging healthy eating, application of fluoride varnish, application and maintenance of fissure sealants)

Major Outcomes Considered

- Incidence of dental caries
- Accuracy of oral examination in the school versus examination in the dental clinic
- Timing of emergence of permanent teeth and the development of occlusion
- Rate of progression of dental caries

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

As preparation for guideline development, an internet search was conducted using Google to provide an overview of public dental services for school children in high-income countries. The results of this search are summarised in Appendix 1 in the original guideline document and illustrate the unique nature of state-funded dental services for children in Ireland, which have a population remit for children under the age of 16 but operate without a system which allows for universal access and continuity of care. In addition, a literature search was conducted in PubMed to identify publications on the subject of "school dental screening", to explore how dental "screening" is used in other countries and to identify any evidence that might inform decisions on the most appropriate setting for conducting oral health assessments for school-aged children.

The Guideline Development Group agreed that key developmental milestones in the oral development of school-aged children, namely the timing of emergence of permanent teeth and the development of the occlusion, should be used as the basis for informing the timing of oral health assessments. While there are several oral conditions for which children should be assessed, it was agreed that the interval between assessments

should be based on the rate of caries progression, given that caries is the most common oral condition affecting children. The key questions to be addressed by the guideline therefore related to the timing of emergence of the permanent teeth and the rate of caries progression in primary and permanent teeth in children and adolescents. Separate search strategies for tooth emergence and for caries progression (see Appendix 3 in the original guideline document) were developed for PubMed and were updated before the guideline was finalised. Longitudinal studies were selected in preference to cross sectional studies. Relevant text books and published clinical guidance were also consulted (see Appendix 3 in the original guideline document).

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Levels of Evidence*

1++ High quality meta-analyses, systematic reviews of randomised controlled trials (RCTs), or RCTs with a very low risk of bias

1+ Well-conducted meta-analyses, systematic reviews or RCTs with a low risk of bias

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3 Non-analytic studies, e.g., case reports, case series

4 Expert opinion

*Source: SIGN guideline development handbook, SIGN 50 (http://www.sign.ac.uk/methodology/index.html).

Methods Used to Analyze the Evidence

Systematic Review

Description of the Methods Used to Analyze the Evidence

Not stated

Methods Used to Formulate the Recommendations

Informal Consensus

Description of Methods Used to Formulate the Recommendations

This guideline was developed by a Guideline Development Group based on a review of the international literature on public dental services for school children (see Appendix 1 in the original guideline document), age of emergence of permanent teeth, rates of caries progression and relevant

evidence-based guidelines. In the absence of a new national oral health policy, the Guideline Development Group was guided by current national oral and general health policy documents. The recommendations of two reviews of the Public Dental Service commissioned by the Department of Health and Children in 2008 and by the Health Service Executive (HSE) in 2010 were also taken into account. Recommendations were formulated by the Guideline Development Group using informal consensus methods, following consideration of the available evidence and advice received during the consultation process.

Rating Scheme for the Strength of the Recommendations

Grades of Recommendations*

A At least one meta-analysis, systematic review, or randomised controlled trial (RCT) rated as 1++, and directly applicable to the target population

OR

A body of evidence consisting principally of studies rated as 1+, directly applicable to the target population, and demonstrating overall consistency of results

B A body of evidence including studies rated as 2++, directly applicable to the target population, and demonstrating overall consistency of results

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Extrapolated evidence from studies rated as 1++ or 1+

C A body of evidence including studies rated as 2+, directly applicable to the target population, and demonstrating overall consistency of results

OR

Extrapolated evidence from studies rated as 2++

D Evidence level 3 or 4

OR

Extrapolated evidence from studies rated as 2+

GPP (Good Practice Point) Recommended best practice based on the clinical experience of the Guideline Development

*Source: SIGN guideline development handbook, SIGN 50 (http://www.sign.ac.uk/methodology/index.html).

Cost Analysis

As part of the guideline development process, the Guideline Development Group (GDG) attempted a desk-top assessment of the cost effectiveness of oral health assessments conducted in the clinic and in the school to determine if one method offered an advantage over the other in terms of efficiency and cost. However, due to the lack of standardisation in the practice of both procedures, the number of assumptions that had to be made about timings and costs, and the lack of data to measure effectiveness (e.g., numbers requiring and subsequently receiving treatment), the GDG was unable to make a meaningful comparison of the cost effectiveness of the two methods. The lack of information on the costs and outcomes of the school "screening" programme was also noted in the review of public dental services by Oral Care Consulting.

Method of Guideline Validation

Peer Review

Description of Method of Guideline Validation

Not stated

Evidence Supporting the Recommendations

References Supporting the Recommendations

National Collaborating Centre for Acute Care. Dental recall: recall interval between routine dental examinations. London (UK): National Institute for Clinical Excellence (NICE); 2004 Oct. 118 p. [153 references]

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Regular oral health assessment is fundamental to promoting, protecting and improving children's oral health; it allows caries to be detected at an early stage and treated using non-operative or minimally invasive techniques. Early effective intervention is easier for the child and avoids invasive and more costly treatment. Regular oral health assessment also allows oral development to be monitored so that appropriate advice, treatment or referral can be provided in a timely manner. Another essential feature of regular oral health assessment is that it provides the opportunity to reinforce good home care practices, which are the key to lifelong oral health.

Potential Harms

Not stated

Qualifying Statements

Qualifying Statements

- It is important to note that guidelines are not intended to replace the healthcare professional's expertise or experience, but are a tool to assist practitioners in their clinical decision-making process, with consideration for their patient's preferences.
- In this guideline, the terms "school-aged children" or "school children" cover the age range 4–15 years, and we use "age 5" when referring to children in Junior Infants class. The term "oral health assessment" refers to the process of identifying children who would benefit from dental services.

Implementation of the Guideline

Description of Implementation Strategy

Data Collection and Audit

Two recent reviews of the Public Dental Service noted the lack of standardised data collected by the Public Dental Service about the School Dental Programme and the lack of defined health outcomes, both of which are necessary for evaluating the effect of the programme on children's oral health. The recommendations in this guideline have considered the setting, frequency and procedure for conducting oral health assessments and provide a framework against which their quality and effectiveness (in terms of oral health improvement) can be measured.

Standardised data should be collected locally and collated nationally, to allow comparison of the effect of the programme between areas and also

to produce a national picture of the outcome of the Oral Health Assessment Programme. In keeping with the key developmental milestones identified in this guideline and with consideration for the key ages selected for epidemiological surveys, the tables in Section 4 in the original guideline document identify the key data suggested for local collection.

Clinical Audit

Clinical audit is part of best practice and should be introduced to assess the quality of the procedure of oral health assessment, to ensure that no oral health condition is overlooked, and that appropriate additional diagnostic tools such as radiographs or fibre-optic transillumination (FOTI) are used in the assessment process. Audit of the quality of radiographs has become a required part of dental practice, and the introduction of clinical audit for a sample of children examined by each clinician in a clinic would be another step towards ensuring the quality of assessment and the appropriateness of oral health care plans.

Implementation

The recommendations in this guideline present a best-practice approach to providing a programme of oral health assessments to school-aged children as part of a state-funded service. The international overview of different systems of oral health services for children coupled with the best available evidence on the key milestones in the oral development of children have informed the decisions of the Guideline Development Group. In the process of developing this guideline, it became apparent that current practice for providing oral health services for children is removed from what the evidence suggests is best practice. Consequently, the recommendations in this guideline potentially pose challenges for implementation.

Two reviews have highlighted the lack of an oral health policy and national priorities to guide the activities of the Public Dental Service. This guideline has been developed in the same vacuum. Although the Health Service Executive is currently undergoing a challenging period of change and constraints due to financial restrictions, the recommendations in this guideline are robust and can be applied regardless of how state-funded dental services for children may be configured in the future. The application of the recommendations, to the entire population or to selected priority groups within the population, in full or as part of a phased implementation plan, are policy decisions that lie outside of the remit of this guideline.

The recommendations in this guideline, together with those of the other three evidence-based guidelines developed for the Public Dental Service, provide a best-practice framework for radically overhauling and improving the way state-funded oral health services for children are provided. The suite of guidelines offers an evidence-based approach to improving children's oral health and quality of life. Implementation of these guidelines, in the medium term, will reduce demand on secondary care services such as dental general anaesthesia and, in the long term, has the potential to improve oral health and quality of life into adulthood by promoting effective self-care, which is the foundation of good oral health throughout life.

Implementation Tools

Audit Criteria/Indicators

Chart Documentation/Checklists/Forms

Clinical Algorithm

Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Staying Healthy

IOM Domain

Effectiveness

Patient-centeredness

Timeliness

Identifying Information and Availability

Bibliographic Source(s)

Irish Oral Health Services Guideline Initiative. Oral health assessment: best practice guidance for providing an oral health assessment programme for school-aged children in Ireland. Cork (Ireland): Oral Health Services Research Centre; 2012. 52 p. [111 references]

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2012

Guideline Developer(s)

Oral Health Services Guideline Initiative - Medical Specialty Society

Guideline Developer Comment

The Oral Health Services Guideline Initiative is a collaboration between the Oral Health Services Research Centre, the Health Service Executive, and the UK Cochrane Centre in Oxford.

Source(s) of Funding

The guideline was funded by the Health Research Board (Grant No. S/A013).

Guideline Committee

Guideline Development Group

Composition of Group That Authored the Guideline

Guideline Development Group Members: Anne O'Neill (*Chair*), Principal Dental Surgeon, HSE Dublin North East; Stephen Brightman, Senior Dental Surgeon, HSE West; Máiréad Harding, Senior Dental Surgeon, HSE South; Michael Mulcahy, A/Principal Dental Surgeon, HSE Dublin Mid-Leinster; Mary McNamara, Dental Nurse, HSE South; Alice O'Connell, Irish National Teachers Organisation (INTO); Anne O'Connell, Senior Lecturer/Consultant Paediatric Dentistry, Dublin University Dental Hospital; Mary O'Farrell, Principal Dental Surgeon, HSE Dublin North East; Patrick Quinn, A/Principal Dental Surgeon, HSE South; Marie Tuohy, Principal Dental Surgeon, HSE South

Financial Disclosures/Conflicts of Interest

Not stated

Guideline Status

This is the current release of the guideline.

Guideline Availability

Electronic copies: Available in Portable Document Format (PDF) from the Oral Health Services Research Centre Web site .

Availability of Companion Documents

The appendices of the original guideline document provide the following:

- Overview of international oral health care systems for children
- Criteria for referral for state-funded orthodontic services (modified IOTN)
- Caries risk assessment checklist
- Example of a consent form for the Health Service Executive (HSE) School Oral Health Programme

Patient Resources

None available

NGC Status

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